REQUEST FOR INFORMATION - NASA OFFICE OF THE CHIEF TECHNOLOGIST GAME CHANGING TECHNOLOGY DIVISION - GAME CHANGING DEVELOPMENT PROGRAM

General Information

Solicitation Number:	NNH10UA007-1
Reference Number:	N/A
NAIS Posted Date:	Aug 24, 2010
FedBizOpps Posted Date:	Aug 24, 2010
Response Date:	Sep 12, 2010
Recovery and Reinvestment Act Action?:	NO
Classification Code:	A -- Research and Development
NAICS Code:	541712 - Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)
Set-Aside Code:	N/A
Internet Address:	http://prod.nais.nasa.gov/cgi-bin/eps/bizops.cgi?gr=D&pin=04#143328

Office Address

NASA/Goddard Space Flight Center, NASA Headquarters Acquisition Branch, Code 210.H, Greenbelt, MD 20771

Description

In fiscal year 2011, NASA plans to begin the Game Changing Development Program (GCDP), an element of the Office of Chief Technologist's Space Technology Program. The GCDP will develop novel aerospace capabilities that have more technical risk yet higher potential payoff than the technologies being developed in support of NASA's mission directorates. These game changing technologies seek to both find the mission scenarios that make optimal use of technology advances and to find innovative technology that enables challenging mission scenarios.

The GCDP focuses on developing radically new approaches to NASA's future space missions and the nation's significant aerospace needs. Where other technology development activities seek the steady and deliberate evolution of system and mission capabilities, the successful products of the GCDP should provide revolutionary advances

in capabilities to enable missions that cannot otherwise be accomplished or that significantly improve mission performance compared with conventional approaches. The objective of the GCDP is to mature such technologies starting from a TRL of 2/3 to a TRL of 4.

To support program formulation, the NASA Office of the Chief Technologist is seeking information from potential respondents to a future solicitation. The information requested is in two categories.

• Candidate technologies to be developed. Responses will help NASA understand the technical possibilities for activities within the program, structure future solicitations to encompass the appropriate range of possibilities, identify appropriate evaluation criteria and evaluators, and refine programmatic plans and expectations.

• The program processes to be used in evaluating, selecting, and developing technologies. Responses will help ensure fair and appropriate handling of submitted ideas and effective development of technologies with the highest potential impact to NASA's mission.

More information about the GCDP can be found below and at http://www.nasa.gov/pdf/468396main_Barthelemy_forum_GCD_v5b.pdf . Respondents may submit any number of separate responses to either or both of these items, providing that no individual item exceeds two pages, as described below.

NASA appreciates responses from all capable and qualified sources including, but not limited to, NASA Centers, universities, university affiliated research centers, federally-funded research and development centers, private or public companies, and government research laboratories.

GCD Technical Expectations

A key requirement in this program is that the technology under consideration must have the potential to make radical improvements in the way NASA accomplishes its missions. Technologies and capabilities that promise incremental increases in performance of established systems are explicitly not of interest. This program focuses exclusively on technological advances that have the potential to change the way a mission is accomplished, either by enabling a new system paradigm or by improving the performance of an established system such that it can perform missions not previously possible. Also of interest are system paradigms and technologies that can radically reduce the cost of accomplishing mission objectives.

Candidates for potential investment by this program through future solicitations must have demonstrated their fundamental feasibility. Although program activities expect to accept technological risk, a candidate approach must be in accord with established scientific and engineering principles and must not depend on inventions or discoveries that are not credible within a 5-year timeframe and have the potential to mature to at least TRL-4 in a two-year timeframe.

GCD Process Expectations

In order to help identify capabilities that would benefit from investment by the GCDP, an initial solicitation is planned that will seek ideas for concept studies. The output of a study will consist of a summary concept paper, which will be publicly released. If the description of the concept must include proprietary or restricted information, that information should be segregated into a separate volume. Concept studies will become one source of ideas for NASA officials to use in identifying and prioritizing future capability development investments. Other sources include research by program personnel, conversations with people inside and outside of NASA, and unsolicited ideas. Concept study reports are explicitly not proposals for a next phase of the activity but rather an assessment of what is possible in the near term. They should not constitute a recommendation or proposal for a single preferred approach but a quantitative assessment of the approach to obtaining the capability.

A peer panel of subject matter experts (SMEs) will evaluate the concept papers. Selected concepts resulting from the concept study or other input will be the basis for funding capabilities development projects. When a project is selected for funding, a project manager (PM) will be identified to lead the activity. The PM will be responsible for defining the project, soliciting follow-on activities, implementing the project, and managing the funded activities. The implementation phase of the project will be guided by the PM, supported by a team of SMEs. Frequent, informal reviews will be used to maintain the pace of innovation and to assess feasibility of the approach. Because of the high-risk nature of these projects, it is anticipated that as many as 30-40% of the efforts selected for funding will not achieve their anticipated benefits and be terminated early.

Technology development projects should demonstrate TRL-4 after about 2 years; if demonstration at TRL-5/6 is reasonable, an additional year may be added. Thus the concept development studies of interest should focus on the systems that could be ready for full scale development in the 5-10 year timeframe.

Technology development projects will be open to teams involving NASA centers, industry, other government agencies and academia. Leads for the responding teams may be from any of these sources.

The GCDP office will employ various approaches to achieve its challenging objectives. Its portfolio will include both large and small projects. The office intends to formally solicit ideas for new program concepts at least semi-annually, but it also will also use other approaches that allow it to pursue compelling opportunities as they occur.

Typical concept studies will be funded at a level of $300-500K; technology development projects will be funded at a level of $3-12M/yr for two years, generally, and three years if required to reach TRL 5/6.

Instructions to Responders

This is not a request for proposal, quotation, or invitation for bid notice and is intended for information and planning purposes only. NASA does not intend to make any awards on the basis of this RFI. However, NASA plans to put in place a process like the one described in the previous section of this document in the future and issue an initial solicitation seeking technologies to fund as concept studies that could over time develop into technology development activities. NASA will not provide reimbursement for costs incurred in responding to this RFI. NASA will evaluate submissions for its own purposes in structuring potential future program activities. Proprietary and trade secret information submitted in response to this RFI should be clearly marked. Subject matter experts and other personnel involved in evaluating responses that contain proprietary information will be precluded from future activities that may pose a conflict of interest with respondents or other interested parties. NASA may contact respondents to this RFI if clarifications or additional information is desired. Submissions under this RFI do not bind NASA to any further action other than the protection of any proprietary or trade secret information provided. All future solicitations are subject to availability of funds and program direction of NASA.

This announcement contains all information required to submit a response (see below). No additional forms, kits, or other materials are needed.

Oral communications are not acceptable in response to this notice.

NASA will not consider classified submissions. NASA will use submitted materials to inform its decisions on program development, to include future solicitations and research areas. However, NASA will not release any individual RFI responses, proprietary information, or trade secret information identified as such in any of the RFI submissions.

Submissions have the following formatting requirements: Microsoft Word (.doc) or portable document format (.pdf) formatted documents of 2 pages or less at 12 point font.

Responses to technical items should include the following:
• Summary of the technology and how it could be used in a system / mission context.
• Comparison between the current practice and the proposed game changing idea, justifying the expectation of a radical improvement in mission performance or cost.
• Assessment of the major risks involved in the idea and how a development program could retire those risks.

Responses to programmatic process items should include the following:
• The element of GCDP process plans that is the subject of the response.
• The comment concerning the identified item.
• Suggestion as to how the item could be improved.

NOTE: All responses to this RFI must arrive at hq-gcdrfi-2010@mail.nasa.gov by midnight on September 12, 2010. Mark all responses: RFI, Game Changing Technology Development

Questions about this RFI may be directed to:

Point of Contact

Name: Jean-Francois M Barthelemy
Title: Game Changing Development Program Manager (Acting)
Phone: 757-864-2809
Fax: 757-864-1649
E-mail: hq-gcdrfi-2010@mail.nasa.gov